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## PATENT SPECIFICATION



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### PROVISIONAL SPECIFICATION.

#### Improvements in and relating to Toothbrushes.

We, EDWARD BARON, M.B., Ch.B., of 212, High Road, Tottenham, London, N. 15, and LEONARD FREDERICK BATSTONE, of 20, Bruce Castle Road, Lordship Lane, Tottenham, London, N. 17, British subjects, do hereby declare the nature of this invention to be as follows:—

This invention relates to an improved method of cleaning the teeth, which is more in keeping with the present day views of the Dental profession, than by the use of the brushes hitherto employed.

It is a recognised fact that for proper dental hygiene it is necessary to massage the gums away from the base of the teeth and remove efficiently foreign substances (such as food debris from the interstices of the teeth), such brushing should be conducted in a vertical direction by an up and down movement of the brush away from the gums. This however is a difficult and unnatural procedure for most people who usually use the tooth-brush in a horizontal (to and fro) movement around the mouth.

It is the purpose of this invention that while retaining the natural and normal to and fro horizontal method of using the tooth-brush, the brush or brushes may be

made to revolve in a vertical direction and away from the gums. This desired action may be accomplished in the manner described herein-after.

In dental brushes of known type, the brush (i.e. the bristles) are arranged to rise at right-angles to the base to which they are affixed. According to this invention a horizontal thrust may still be employed.

A further feature of this invention is that the said brushes may be spiral and built upon a centre or centres capable of rotation. It may also be arranged for the said brushes to be removeable and replaceable in the toothbrush-holder.

One of the advantages resulting from the use of this invention is that the efficiency of the brush according to present day standards as before-mentioned is considerably enhanced. A further advantage is that the cleansing of the teeth and efficient massaging of the gums is effected in a shorter space of time. In the case of the brushes being replaceable a considerable economy will be effected.

May 28th 1931.

E. BARON,  
L. F. BATSTONE,

### COMPLETE SPECIFICATION.

#### Improvements in and relating to Tooth Brushes.

We, EDWARD BARON, M.B., Ch.B., of 212, High Road, Tottenham, London, N. 15, a British Subject, and LEONARD FREDERICK BATSTONE, of 43, Bruce Castle Road, Lordship Lane, Tottenham, London, N. 17, a British Subject, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to tooth brushes and such like articles and its object is to provide a simple and efficient article for cleaning the teeth, which is more in keeping with the present day views of the dental profession, than the use of the

brushes hitherto employed.

It is a recognized fact that for proper dental hygiene it is necessary to massage the gums away from the base of the teeth and in order to remove efficiently foreign substances (such as food debris) from the interstices of the teeth, such brushing should be conducted in a vertical direction by an up and down movement of the brush away from the gums. This however, is a difficult and unnatural procedure for most people, who usually use the tooth-brush in a horizontal (to and fro) movement around the mouth.

It is one of the features of this invention that while retaining the natural and normal to and fro horizontal movement

when using the toothbrush, the head carrying the bristles is made to revolve freely in a plane parallel with the gums. In other words, although a horizontal thrust may still be employed, the group of bristles is arranged to revolve freely upon an axis at right-angles to the direction of the thrust, i.e. in a vertical plane.

The main advantage derivable from the use of this invention is that the cleansing of the teeth and efficient massaging of the gums is effected in a superior measure, without any appreciable departure from—or addition to—the normal method of using or manipulating a tooth brush. The brush head moreover, is replaceable so that not only can a considerable economy be effected, but bristles or heads of different strengths or shapes may be substituted. The head, furthermore may carry a polishing pad instead of bristles, if and when desired.

One embodiment of the present invention is illustrated by the accompanying drawing, to which reference will hereinafter be made.

Figure 1 is a complete view of the tooth brush in perspective. In the remaining figures (upon an enlarged scale), Figure 2 is a sectional elevation showing a modified shape of stem or handle, Figure 3 an elevation of the head by itself, Figure 4, a cross section through the end of the stem or handle, and Figure 5 a section on line 5<sup>x</sup>—5<sup>x</sup> of Fig. 4.

The same or corresponding parts in the several figures are denoted by the same reference letters.

The surface of the end of the handle B carrying the bristles may be either flush with the main stem, as shown by A in Figs. 1 and 4, or it may have a shallow recess as shown by H in Fig. 2.

The head end A of the handle is provided with a small hole C to receive the central portion or shank D of the rotatably mounted head E bearing the bristles F or equivalent.

The drawing shows the rotary head E in the shape of a disc, its shank D having a neck or circumferential groove G therein (Fig. 3). The portion of the shank beyond the groove G is preferably tapered and the other portion cylindrical, as shown. A thin washer-like collar J is also provided upon the head E.

The bristles F are disposed in a circular, spiral or other arrangement, and they are preferably longer or higher at or near the centre than nearer the periphery, so as to present in combination the appearance of a cone. The effect of this is that when the conical group of bristles or equivalent is held at an angle to any

particular side of the jaw or set of teeth, the usual to and fro motion will cause it to revolve, owing to the friction or drag of the bristles or equivalent. The bristles may be shaped in a serrated manner, if found more conducive to producing the desired result.

In the form illustrated, a staple-shaped piece of spring wire K is inserted in holes (specially drilled for the purpose) in the handle B at right angles to the axis of the hole C, so as to produce two spaced bars cutting transversely across the hole C and encroaching into its area slightly at two opposite sides. These two bars K serve to retain the shank D in the hole C, it being simply necessary to press the stock into the hole, whereupon the bars K will first be forced slightly apart by the wedging effect of the tapered part of D and further pressure will cause the bars K to snap into the groove G and function as a pair of retaining keys, not materially interfering with free rotation of the shank D in the hole C. In order to enable the bars K to be expanded, clearance spaces L are provided upon the inner wall of the hole C. Nevertheless, the staple K may be made rigid and withdrawable, so that the clearance spaces L may not be indispensable. Easy and quick detachment and replacement of the head is in any case provided for.

The end of the shank D should not come quite flush with the external opening of the hole C, so that it may not come in contact with the mouth of the user. The modified form (Fig. 2) in which there is a recess for containing the head, also ensures that the bristles or equivalent do not come in contact with the mucous membrane of the mouth, the depth of the recess H being such as to enclose the bristles up to about half of their height. As has been already intimated, the details of the invention can be modified to meet any particular requirements, and is not limited to the forms illustrated herein.

We are aware that it has been proposed to provide a tooth brush comprising a handle and a head carrying bristles, connected thereto, said head being adjustably rotatable about an axis perpendicular to the handle and adapted to be held in adjusted position by suitable locking means.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

1. The improvement relating to tooth brushes comprising a head bearing the bristles or equivalent, such head being

- freely rotatable about an axis perpendicular to the direction of motion of the handle, so that, when the latter is at the proper angle and moved to and fro in the usual way, the head will be caused to revolve by reason of its contact with the gum and/or teeth.
2. A tooth brush as claimed in claim 1 having a rotatory head bearing the bristles or equivalent, such head being provided with a shank adapted to fit rotatably in a hole in the handle.
3. A tooth brush having a rotatory head as claimed in claim 2, and having the bristles or equivalent disposed therein or thereon in conical formation for the purpose specified.
4. A tooth brush having a rotatory head as claimed in claim 2, the handle of which has a recess therein for containing said head, for the purpose specified.
5. A tooth brush as claimed in claims 1 to 4, comprising a disc-like bristle or like holder, a shank upon the centre of same, and a handle having a hole therein in which said shank can rotate, and means extending transversely into the area of said hole and keying into a circumferential groove in the shank for the purpose of retaining the same within the hole.
6. A tooth brush substantially as described with reference to Figure 1 of the accompanying drawing.
7. A tooth brush substantially as described with reference to Figure 2 of the accompanying drawing.
8. A tooth brush substantially as described with reference to Figures 3, 4 and 5 of the accompanying drawing.
- Dated the 27th day of February, 1932.
- For the Applicants,  
 STANLEY, POPPLEWELL &  
 FRANCIS,  
 Chartered Patent Agents,  
 Jessel Chambers,  
 88/90, Chancery Lane, London, W.C. 2.

[This Drawing is a reproduction of the Original on a reduced scale.]

Fig. 1.

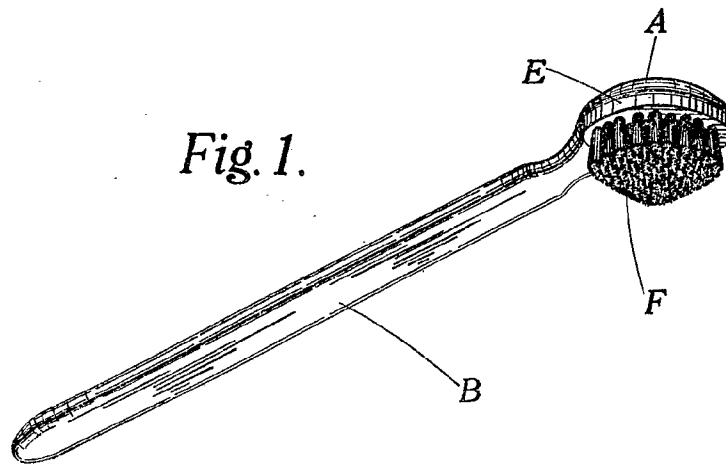


Fig. 2.

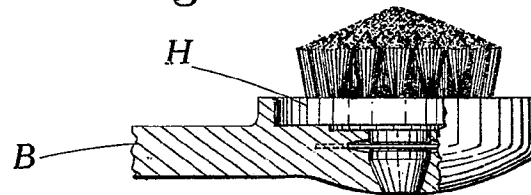


Fig. 3.

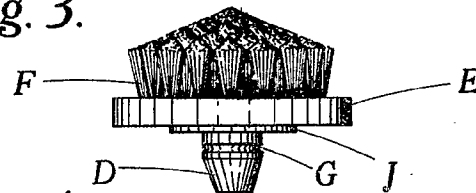


Fig. 4.

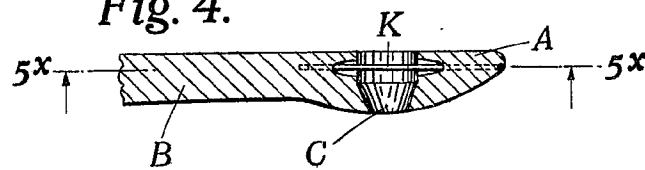


Fig. 5.

